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10/736,952	12/15/2003	Anssi Tuomas Aura	305425.02	5539
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MICROSOFT CORPORATION			EXAMINER	
ONE MICROSOFT WAY			POWERS, WILLIAM S	
REDMOND, WA 98052-6399				
			ART UNIT	PAPER NUMBER
			2134	
			NOTIFICATION DATE	DELIVERY MODE
			12/06/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/736,952	AURA, ANSSI TUOMAS	
	Examiner William S. Powers	Art Unit 2134	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 10/01/2007.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-86 is/are pending in the application.
- 4a) Of the above claim(s) 11,12,15-46,48 and 57-85 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-10,13,14,47,49-56 and 86 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 01 October 2007 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

### ***Response to Arguments***

1. Applicant's arguments filed 10/01/2007 have been fully considered but they are not persuasive.
2. As to Applicant argument that, "Sreemanthula does not disclose a secure router advertisement that includes a nonce field populated with a home address of the mobile node" (Remarks, page 12, lines 10-13), the Examiner respectfully disagrees. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). It is pointed out that the Sreemanthula patent was not used to reject the limitation. The Meier reference was used (see Office Action of 6/29/2007) to reject the aforementioned limitation that was present in the now cancelled claim 12.
3. As to Applicant's argument that, "Nikander does not teach a purported identifier of the mobile node being included in the nonce field of the secure router advertisement" (Remarks, page 12, lines 10-13), the Examiner respectfully disagrees. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. The Examiner has provided specific column and line numbers of the Nikander patent that

apply to the claim limitations, but the Applicant has not provided any specific evidence to support the Applicant's contention. For at least the reasons mentioned above, the rejection of the claims is maintained.

***Response to Amendment***

4. Claims 1, 47 and 86 have been amended.
5. Claims 11-12, 15-46, 48 and 57-85 have been cancelled.
6. Claims 1-10, 1—14, 47, 49-56 and 86 are pending.
7. The Examiner has stated the below column and line numbers as examples. All columns and line numbers in the reference and the figures are relevant material and Applicant should be taken the entire reference into consideration upon the reply to this Office Action.

***Information Disclosure Statement***

8. No Information Disclosure Statement was submitted with the application.

***Drawings***

9. In light of the submission of the amended drawings, the previous objection to the drawings has been withdrawn.

***Claim Objections***

10. The previous objection to claims 41, 81 and 85 has been rendered moot by the cancellation of those claims.
11. Claim 86 is objected to because of the following informalities: there are 2 articles before "secure router advertisement" in line 5 of the claim. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claim 86 is rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No. 7,155,500 to Nikander.

As to claim 86, Nikander teaches generating a secure router advertisement data structure, wherein a nonce field of the secure router advertisement data structure contains an identifier (in response to a solicitation message an advertisement is generated and populated with an identifier, the tentative address or TA, of the

requesting node as well as other information) (Nikander, column 11, line 4-column 12, line 28).

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

16. Claims 1-6 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 7,130,614 to Sreemanthula et al. (hereinafter Sreemanthula) in view of US Patent No. 6,970,459 to Meier.

As to claim 1, Sreemanthula teaches:

- a. Attaching a secure router advertisement to an address update associated with a mobile node (data from the router advertisement are attached to the registration request) (Sreemanthula, column 11, line 23-column 12, line 65),

Sreemanthula does not expressly mention a home address as part of the advertisement message. However, in an analogous art, Meier teaches the secure router advertisement includes a nonce field populated with a home address of the mobile node (advertisement message is sent, in response to the solicitation, and includes the source address of the client) (Meier, column 7, lines 19-25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the mobile network communications of Sreemanthula with the home address of Meier in order to allow the advertisement to be sent to the correct client that sent the solicitation as suggested by Meier (Meier, column 7, lines 19-25).

Sreemanthula as modified further teaches:

- b. Sending the address update including the attached secure router advertisement to a correspondent node (binding procedure is performed) (Sreemanthula, column 11, line 23-column 12, line 65).

As to claim 2, Sreemanthula as modified teaches the address update includes a Mobile IPv6 compliant binding update (the embodiments of the patent are used in an IPv6 based environment) (Sreemanthula, column 10 lines 1-2).

As to claim 3, Sreemanthula as modified teaches the address update is sent by a node acting as a representative of the mobile node (mobile node is representing itself) (Sreemanthula, column 10 lines 1-2).

As to claim 4, Sreemanthula as modified teaches:

- a. Sending a secure router solicitation to one or more access routers (MN1 sends router solicitation) (Sreemanthula, column 12, lines 1-7).
- b. Receiving the secure router advertisement, responsive to the secure router solicitation (MN1 receives a router advertisement in response to the router solicitation) (Sreemanthula, column 12, lines 1-7).

As to claim 5, Sreemanthula as modified teaches:

- a. Sending a secure router solicitation to one or more access routers, the secure router solicitation including an identifier of the mobile node (the source address (identifier) of the client is included in the solicitation message) (Meier, column 7, lines 19-25).
- b. Receiving the secure router advertisement responsive to the router solicitation, the secure router advertisement including the identifier of the mobile node (advertisement message is sent, in response to the solicitation, to the source address of the client) (Meier, column 7, lines 19-25).

As to claim 6, Sreemanthula as modified teaches:

- a. Sending a secure router solicitation to one or more access routers, the secure router solicitation including the home address of the mobile node (the

source address of the client is included in the solicitation message) (Meier, column 7, lines 19-25).

b. Receiving the secure router advertisement responsive to the router solicitation, the secure router advertisement including the home address of the mobile node (advertisement message is sent, in response to the solicitation, to the source address of the client) (Meier, column 7, lines 19-25).

As to claim 14, Sreemanthula as modified teaches the mobile node is associated with a current address within an access network and the address update specifies the current address of the mobile node (the care of address is used in the binding update to ensure that packets are sent to the mobile node via the care of address (Sreemanthula, column 15, lines 28-46).

17. Claims 7-11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 7,130,614 to Sreemanthula et al. (hereinafter Sreemanthula) in view of US Patent No. 6,970,459 to Meier as applied to claim 1 above, and further in view of US Patent No. 7,155,500 to Nikander.

As to claim 7, Sreemanthula as modified does not expressly mention including public keys in solicitation messages. However, in an analogous art Nikander teaches:

a. Sending a router solicitation to one or more access routers, the secure router solicitation including a public key associated with the mobile node (public key of the soliciting node) (Nikander, column 10, lines 28-48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the mobile network communications of Sreemanthula with the public key of Nikander in order to increase the security of communications as suggested by Nikander (Nikander, column 10, lines 28-48).

b. Receiving the secure router advertisement responsive to the router solicitation, the secure router advertisement including the public key (Nikander, column 10, lines 28-48).

As to claim 8, Sreemanthula as modified teaches the secure router advertisement includes a signature of an access router associated with an access network, wherein the mobile node may receive one or more messages at an address that belongs to the access network of the access router (signature of the router is part of the advertisement) (Nikander, column 11, lines 5-61).

As to claim 9, Sreemanthula as modified teaches the secure router advertisement includes a signature of an access router associated with an access network, wherein a representative of the mobile node may receive one or more messages at an address that belongs to the access network of the access router

(signature of the router is part of the advertisement and the mobile node represents itself) (Nikander, column 11, lines 5-61).

As to claim 10, Sreemanthula as modified teaches the mobile node is associated with a cryptographically-generated address generated by a public key and the secure router advertisement includes the same public key (address is generated by combining the routing prefix and an interface identifier (Nikander, column 6, lines 40-42), the interface identifier is generated with a public key (Nikander, column 9, lines 12-15) and the public key is in the advertisement (Nikander, column 10, lines 28-50).

As to claim 11, Sreemanthula as modified teaches the secure router advertisement includes a nonce field populated with an identifier of the mobile node (the TA (tentative address) of the mobile node is included in the advertisement from the router) (Nikander, column 11, lines 5-67).

As to claim 13, Sreemanthula as modified teaches the secure router advertisement includes a nonce field populated with a public key associated with the mobile node (public key is one of the fields of the advertisement) (Nikander, column 11, lines 5-67).

18. Claims 47 and 49-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 7,130,614 to Sreemanthula et al. (hereinafter Sreemanthula) in view of US Patent No. 7,155,500 to Nikander.

As to claim 47, Sreemanthula teaches:

- a. Receiving an address update from a mobile node, the address update including a secure router advertisement (data from the router advertisement are attached to the registration request) (Sreemanthula, column 11, line 23-column 12, line 65),

Sreemanthula does not expressly mention an identifier in the registration request.

However, in an analogous art, Nikander teaches a purported identifier of the mobile node and a purported current address (in response to a solicitation message an advertisement is generated and populated with an identifier, the tentative address or TA, of the requesting node as well as other information) (Nikander, column 11, line 4-column 12, line 28).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the mobile network communications of Sreemanthula with the inclusion of a public key in the advertisement of Nikander in order to prevent a denial of service attack as suggested by Nikander (Nikander, column 11, lines 5-67).

Sreemanthula as modified further teaches:

- b. Verifying that the secure router advertisement is signed by an authorized access router (procedure for verifying the signature) (Nikander, column 16, line 1-column 17, line 55).
- c. Verifying that the purported current address is associated with the authorized access router (procedure for verifying the current address) (Nikander, column 16, line 1-column 17, line 55).
- d. Verifying the association between the purported identifier and the purported current address using data from the secure router advertisement (procedure for verifying the identifier) (Nikander, column 16, line 1-column 17, line 55).

As to claim 49, Sreemanthula as modified teaches the address update is a Mobile IPv6 binding update (the embodiments of the patent are used in an IPv6 based environment) (Sreemanthula, column 10 lines 1-2).

As to claim 50, Sreemanthula as modified teaches the purported identifier is a Mobile IPv6 home address (the embodiments of the patent are used in an IPv6 based environment) (Sreemanthula, column 10 lines 1-2).

As to claim 51, Sreemanthula as modified teaches the current address is a Mobile IPv6 care-of address (the embodiments of the patent are used in an IPv6 based environment) (Sreemanthula, column 10 lines 1-2).

As to claim 52, Sreemanthula as modified teaches:

- a. Reading an identifier from the secure router advertisement (procedure for verifying the identifier) (Nikander, column 16, line 1-column 17, line 55).
- b. Verifying that the purported identifier matches the identifier read form the secure router advertisement (procedure for verifying the identifier) (Nikander, column 16, line 1-column 17, line 55).

As to claim 53, Sreemanthula as modified teaches:

- a. Reading a home address from the secure router advertisement (procedure for verifying an address) (Nikander, column 16, line 1-column 17, line 55).
- b. Verifying that the purported identifier matches the home address (procedure for verifying an address) (Nikander, column 16, line 1-column 17, line 55).

As to claim 54, Sreemanthula as modified teaches:

- a. Reading a public key from the secure router advertisement (procedure for verifying a public key) (Nikander, column 16, line 1-column 17, line 55).
- b. Verifying that the same public key was used to generate cryptographically generated address (procedure for verifying a public key) (Nikander, column 16, line 1-column 17, line 55).

As to claim 55, Sreemanthula as modified teaches verifying that the purported current address matches subnet prefix (routing prefix) (Nikander, column 16, line 1-column 17, line 55).

As to claim 56, Sreemanthula as modified teaches verifying that a signature used to sign the secure router advertisement is associated with an access router authorized by certification to advertise a subnet prefix specified in the secure router advertisement (certificates and signatures are verified) (Nikander, column 16, line 1-column 17, line 55).

### ***Conclusion***

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William S. Powers whose telephone number is 751 272 8573. The examiner can normally be reached on m-f 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kambiz Zand can be reached on 571 272 3811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

William S. Powers  
Examiner  
Art Unit 2134



11/29/2007



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